

REMARKS

Applicant respectfully requests reconsideration of the present application in view of the foregoing amendments and in view of the reasons that follow. After amending the claims as set forth above, claims 15-17, 20-21, 24, 27-28, and 31-32 are now pending in this application.

Applicant wishes to thank the Examiner for the careful consideration given to the claims.

Rejection based on Hasegawa

Claims 15-16, 20-21, 25, and 31 are rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over U.S. Patent 5,222,551 ("Hasegawa"). For at least the following reasons, this rejection is traversed.

Claim 15 (as amended) recites, among other things, a heat exchanger comprising several tray-shaped plates, which are placed on top of one another, are sealed together on their peripheral edges, and are provided with passages. Two continuous flow channels are each formed from the passages that lie essentially above one another; wherein each flow channel traverses the plates. The two flow channels are traversed by different media from a single admission side to a single discharge side. Each flow channel has essentially elongate cross sections at the admission and discharge sides, each having a length L, a width B, and a length to width ratio L/B of between 1.5 and 3. The admission and discharge sides of the two flow channels are arranged in a 2 x 2 array with no further flow channels therebetween. The length L is between 15 mm and 25 mm. Hasegawa does not teach or suggest this combination of features.

For example, Hasegawa does not teach or suggest a length L between 15 mm and 25 mm. Indeed, Hasegawa does not teach any suggest dimensions for the oval flow channels. Accordingly, claim 15 is allowable over Hasegawa.

Furthermore, Hasegawa does not teach or suggest the claimed length to width ratio of between 1.5 and 3. It is stated on page 3 of the Office Action:

Hasegawa et al shows the oval flow channels having proportions similar those [sic] of the present invention, however, patent drawings cannot be presumed to be to scale and Hasegawa et al does not state the measurements of the channels. Thus it is unclear whether the channels of Hasegawa et al have the claimed length to width ratio of between 15. and 3.

However, the proportions of the oval flow channels are considered to be a results-effective variable, which one of ordinary skill in the art would optimize based on the specific flow conditions intended for the device. See MPEP 2144.05.

It would have been obvious to one of ordinary skill in the art to use flow channels having a length to width ratio of between 1.5 and 3 in the heat exchanger of Hasegawa et al, based on the intended use of the device and since Hasegawa et al leaves it to one of ordinary skill in the art to determine the actual measurements of the device. (Page 3 of the Office Action.)

Although there is no indication that the drawings are drawn to scale, the oval flow channels in the figures of Hasegawa appear to have a length to width ratio of greater than 3. Additionally, Hasegawa does not specifically teach that the oval flow channels have a length to width ratio of between 1.5 to 3. Thus, Hasegawa does not teach this feature of claim 15. The Supreme Court in *KSR Int'l Co. v. Teleflex, Inc.*, 127 S.Ct. 1727 (2007) has not removed the requirement that the prior art reference (or references when combined) must teach or suggest all the claim limitations. Indeed, *KSR* emphasized cases where all features are known. Furthermore, the exemplary rationales listed in MPEP 2143 suggests that all elements (when the references are combined) need to be known in the art to support a conclusion of obviousness. Thus, the PTO is not relieved of its responsibility of finding prior art teaching or suggesting all the features of the claimed invention to establish a *prima facie* case of obviousness. The assertion that “[i]t would have been obvious... to use flow channels having a length to width ratio of between 1.5 and 3 in the heat exchanger of Hasegawa et al, based on the intended use of the device” is no substitute for finding prior art for establishing the claimed length to width ratio for each flow channel in the prior art along with the other features of claim 15. Accordingly, claim 15 is allowable over Hasegawa.

In regard to the proportions of the oval flow channels of Hasegawa being considered to be a results-effective variable, MPEP 2144.05 states that a “particular parameter must first be recognized as a result-effective variable, i.e., a variable which achieves a recognized result, before the determination of the optimum or workable ranges of said variable might be characterized as routine experimentation. *In re Antonie*, 559 F.2d 618, 195 USPQ 6 (CCPA 1977).” In the present case, the relationship of the proportions of the oval flow channels of Hasegawa and some other variable has not been established. No prior art or evidence has been set forth supporting the asserting that one of ordinary skill in the art would come to the

invention of claim 15 with its claimed length to width ratio L/B based on the teachings of Hasegawa based on unspecified “flow conditions intended for the device.” Because no reason as been set forth that would lead to one of ordinary skill in the art to reached the claimed length to width ratio of claim 15, the rejection of claim 15 is improper. Thus, claim 15 is allowable.

Claims 16 and 20-21 depend from and contain all the features of claim 15, and are allowable for the same reasons as claim 15, without regard to the further patentable features contained therein.

Claim 25 has been canceled. Thus, the rejection of this claim is improper.

Claim 31 (as amended) recites, among other things, a plate for a heat exchanger comprising two passages, wherein the two passages comprises parts of separate flow passages in the heat exchanger that are traversed by different media. Each passage has a single admission side and a single discharge side; wherein each passage has essentially elongate cross sections at its respective admission and discharge sides. The elongate cross sections each has a length L, a width B, and a length to width ratio L/B of between 1.5 and 3. The admission and discharge sides of the two passages are arranged in a 2 x 2 array with no further flow channels therebetween. The length L is between 15 mm and 25 mm.

As previously mentioned, Hasegawa does not teach or suggest a length L of the elongate cross sections being between 15 mm and 25 mm or a length to width ratio L/B of between 1.5 and 3. Accordingly, claim 31 is allowable of Hasegawa.

For at least these reasons, favorable reconsideration of the rejection is respectfully requested.

Rejection based on Hasegawa and Andersson

Claims 17 and 27-28 are rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over Hasegawa and WO 01/67021 (“Andersson”). Claims 17 and 27-28 depend from and contain all the features of claim 15. As previously mentioned, Hasegawa does not teach or suggest a length L of the elongate cross sections being between 15 mm and 25 mm or a length to width ratio L/B of between 1.5 and 3. Andersson does not cure these deficiencies. Thus, claim 15 and its dependent claims 17 and 27-28 are allowable over Hasegawa and

Andersson. For at least these reasons, favorable reconsideration of the rejection is respectfully requested.

Claim objection

Claim 20 is objected to because “it is unclear how the stacked-plate cooler relates to the heat exchanger of claim 1.” Claim 20 has been amended to recite “wherein the heat exchanger is a stacked-plate cooler for a vehicle.” For at least this reason, favorable reconsideration of the objection is respectfully requested.

Allowability of claim 32

Claim 32 depends from and contains all the features of claim 15, and is allowable for the same reasons as claim 15, without regard to the further patentable features contained therein. For at least this reason, allowance of claim 32 is respectfully requested.

Conclusion

Applicant believes that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing or a credit card payment form being unsigned, providing incorrect information resulting in a rejected credit card transaction, or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicant hereby petitions for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 19-0741.

Respectfully submitted,

Date 9/9/2009

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